Using the COMPANY database from the Elmasri/Navathe textbook (the schema diagram of which is in Figure 5.5 and a possible state of which is illustrated in Figure 5.6), devise solutions, in Relational Algebra, to the following informally-stated queries.

1. Report the last name and salary of any employee who is female and who works for either department 1 or department 4.

2. Report the first and last names of any female employee who works on project 7 at least ten hours per week.

3. Report the first and last names of any employee whose salary is at least $30,000 and who does not work on project 7.

4. For each employee $e$ and each project $p$ on which $e$ works, report $e$’s last name, $p$’s name, and the number of hours per week that $e$ works on $p$.

5. For each employee $e$ and each project $p$ on which $e$ works, report $e$’s last name, $p$’s name, and the name of the department that controls $p$. (The $Dnum$ attribute in $Project$ identifies each project’s controlling department.)

6. Report the number of dependents of the employee having SSN 987654321.

7. Report each employee’s first and last names together with her/his number of dependents.

8. (a) Report, for each department (identified by its number), the number of employees who work for it.

(b) Report, for each department (identified by its name), the number of employees who work for it.

(c) Report, for each department (identified by its number), the total number of dependents of employees who work for it.